

CHEMISTRY GUIDE

Acid Blend A 1/3 mix each of citric, tartaric and malic acids. Primarily used in fruit wines to adjust acid levels.

Amylase Enzyme is typically used by all-grain brewers to add to a high adjunct mash that may be low in enzymes to aid in converting starches into sugar. This enzyme can also prevent starch haze in beer. Use 1 teaspoon per 5 gallon batch.

Ascorbic acid acts as a preservative and is used to reduce the risk of oxidation in your bottled beer or wine. ... Ascorbic Acid is an organic acid with antioxidant properties. It is also known as vitamin C. Use 1 teaspoon per 5 gallons. Add when bottling your beer or wine

Bentonite is a negative charged, clay-like mineral, that, like sparkolloid, removes positively charged particles. It works best when the wine is at warmer temperature so we suggest clearing with Bentonite in the late spring or early summer. Bentonite is also more effective at a lower pH because the positive charge on proteins is stronger at lower pH levels.

Calcium Carbonate Sometimes used for temporary hardness in dark beers. Adjusts pH up. In winemaking: Used to lower acidity levels. 2.5 grams per gallon will roughly lower acidity by .1%. It does not require cold stabilization to precipitate-out acid like Potassium Carbonate does, but it takes longer, affects flavor, and it reduces tartaric before dropping out malic or citric acids.

Calcium chloride is usually used in place of Gypsum when sulfates are not desired. Calcium chloride will adjust your mash pH down. 1 gram in 1 gallon changes the salt levels by 72 ppm calcium, 127.5 ppm chloride and adds 180 ppm to the hardness.

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Citric Acid Used primarily in sanitizing solutions to lower pH, therefore making the SO₂ solution more effective. Use 1 tbsp per gallon along with 1 tbsp meta per gallon. Citric is not added directly to must prior to either primary or ml fermentation as its metabolism can lead to volatile acidity.

GLUCOAMYLASE Directions: Add into your mash during the mashing-in or directly after mashing-in. For use in your fermenter, it is recommended to add to chilled wort before or directly after pitching your yeast (if used in the fermenter, it may remain active after beer pasteurization. For use with potable alcohol, add at temperatures below 70°C at saccharification or in the fermenter.

Benefits Maximizes the conversion of starch substrates to fermentable sugars, primarily glucose.

Reduces levels of leftover carbohydrates

Increases the level of fermentation, leading to increased alcohol production

Usage Levels

Mashing-In: 0.5-10 kg/MT of dry grist

Fermenter: 2-12 g/hl wort or beer

Potable Alcohol: 0.3-0.6 kg/MT of dry grist

Homebrew Directions

The utilization is by liquid weight in kilograms with a range of .5 to 10 kg used per MT.

Take the dry weight of the grain bill (X) and plug it into:

$(X/2204.62) * 500g$ [Minimum level, for lower beta-glucan brews]

$(X/2204.62) * 10000g$ [Maximum level, for higher beta-glucan brews]

Gelatin for the batch size of beer you're making (typical dosage is 1 tsp. per 5 gallons) and dissolve in the water. Pour the gelatin/water mixture into your fermenter and wait two days for the beer to clear. You may wish to cold crash to accelerate clearing

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Glycerin can also be known by wine makers as finishing formula. It sweetens, adds body, smooths and mellows wine and liqueurs. For wine, add 1 - 2 ounces per gallon. For liqueurs, add 1 -2 ounces per quart.

Gypsum (calcium sulfate) adds permanent hardness (calcium ions) to brewing water; 1 gram per gallon adds 62 ppm calcium, 147 ppm sulfate. Brewers that use distilled, or RO, water like to add some gypsum back into the water to give it some hardness. Gypsum can also be used to lower the pH of water

Lactic acid has many uses in the brewing world. Works great in lowering mash and water pH, and is also used as an addition to Berliner Weisse and some Wines

Liquid Wine Tannin A liquid form of premium Slovakian wine tannin from the heart of the European/Spanish Chestnut tree. Used instead of powder when very small amounts of tannin are required.

Malic Acid 3.4g per gallon adjusts acidity by +.1%. It will lower pH less than will tartaric acid. Malic acid is the acid found in apples and is therefore the best choice for adjusting ciders. Malic is less sour than tartaric acid and can also be used to make acid adjustments in Rieslings, Gewurztraminer, and Muscat varieties, though many winemakers still prefer to use tartaric acid in these situations. You would not want to add Malic acid to any wine that will undergo a malolactic fermentation. As a note: only half of the artificially added malic acid will convert to lactic acid during a malolactic fermentation.

Pectic Enzyme (ENZ110) is recommended for all fresh fruit wines. Add the Pectic Enzyme to the juice prior to the fermentation process in order to enhance the clarification process. The Pectic Enzyme destroys haze-causing pectin cells that can leave a wine with a permanent milky appearance known as a “pectin haze”.

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Potassium metabisulfite is one of the most important winemaking compounds. It is an antioxidant and bactericide that releases sulfur dioxide into wine must. Use 1/4 teaspoon per five gallons to add 50 ppm. Or, mix 1/4 pound in 1 quart of water to make a stock solution; 1 teaspoon of stock solution in 1 gallon of must yields 50 ppm sulfur dioxide

Sodium Hydroxide (for Acid Test Kit)

Sparkolloid is an amazing wine clarifier made of poly-saccharides mixed with diatomaceous earth. Use 1 tsp per gallon. Boil Sparkolloid with 1 cup of water for 15 minutes and add to fermenter. Wait 1-2 weeks before racking

Tartaric Acid is preferred by professional winemakers, especially for wines destined for Malo-Lactic fermentation as other acid additives such as malic will not convert or citric will impart an undesirable sour flavor to the finished wine. Tartaric Acid is the main acid found in Grape based wine. For adjusting TA, 1 teaspoon per gallon increases acidity by 0.1%. Contains: Food grade tartaric acid. Application Tip: Prior to adding to the batch, dissolve the Tartaric Acid in a 1/2 cup of water and add to the wine prior to fermentation.

Yeast energizer is a blend of diammonium phosphate, yeast hulls, magnesium sulphate, and vitamin B complex. Used to stimulate or restart a fermentation. Add 1/2 teaspoon per gallon of wine must to stimulate or restart a fermentation. Then aerate and apply heat if necessary

Yeast Nutrient is a mixture of diammonium phosphate and food-grade urea that nourishes yeast, ensuring that it remains healthy throughout fermentation. Add one teaspoon per gallon recommended for wine, mead, and cider.